

The data demonstrate the greatly improved safety characteristics of the diluted peroxide formulations.

I claim:

1. A free-flowing, solid, peroxide/diluent formulation comprising:

40-85% by weight of a solid t-butyl peroxy maleic acid,

15-60% by weight of a solid diluent selected from: salts of structure $(R-CO_2)_x M^{(+x)}$ wherein x is an integer selected from 1, 2 or 3 and wherein R is a linear or branched alkyl group of 5-30 carbon atoms optionally substituted with one or more hydroxy (-OH) groups, or a linear or branched mono-, di- or polyalkenyl group of 5-20 carbons and when x is 1, M is a metal ion selected from lithium, sodium, potassium and mixtures thereof, and when x is 2, M is a metal ion selected from calcium, magnesium, lead, barium, cadmium, zinc, and mixtures thereof and when x is 3, M is the metal ion derived from ^{is} aluminum, and salts of structure $CO_2(M^{(+x)})_y$ wherein x and y are integers selected from 1 or 2 wherein when y is 1, x is 2 and M is a metal ion selected from calcium, magnesium, lead, barium, cadmium zinc and mixtures thereof and when y is 2, x is 1 and M is a metal ion selected from lithium, sodium and potassium, mixtures and hydrates thereof,

0-2% by weight of a dust suppressant,

0-2% of a free-flowing aid.

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2. A solid peroxide composition of claim 1 wherein the solid diluent is selected from the group consisting of calcium stearate, zinc stearate or sodium.
3. A solid peroxide composition of claim 2 comprising about 80% t-butyl peroxy maleic acid and about 20% calcium stearate.
4. A solid peroxide composition of claim 1 wherein the dust suppressant is 0.5% mineral oil.
5. A solid peroxide composition of claim 1 wherein the free-flowing agent is 0.5% amorphous silica.
6. A solid peroxide composition of claim 1 comprising 80% t-butyl peroxy maleic acid, 19% calcium stearate, and 1% silica.
7. The use of a composition of claim 1 to polymerize vinyl monomers, to crosslink polyolefins or elastomers, to cure unsaturated polyester resin, and to modify the molecular weight and molecular weight distribution of polyolefin polymers and copolymers, and to attach peroxide decomposition residues to olefin polymers or copolymers.